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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,043	09/29/2000	Jeffrey Jay Scheel	ROC920000177-US1 (IBM-150)	1185
7590	06/15/2004		EXAMINER	SHARON, AYAL I
STEVEN W. ROTH IBM CORPORATION- DEPARTMENT 917 3605 HIGHWAY 52 NORTH ROCHESTER, MN 55901-7829			ART UNIT	PAPER NUMBER
			2123	
			DATE MAILED: 06/15/2004	11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/672,043	SCHEEL ET AL. 	
	Examiner	Art Unit	
	Ayal I Sharon	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 02 April 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-14 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Introduction

1. Claims 1-14 of U.S. Application 09/672,043 originally filed on 09/29/2000 are presented for examination. Claims 1,2,8,9, and 14 have been amended in Applicants' most recent amendment, paper #9, filed 4/2/04.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The prior art used for these rejections is as follows:

4. Borden, T.L. et al. "Multiple Operating Systems on One Processor Complex." 8204 IBM Systems Journal. Vol.28, No.1. pp.104-122. 1989. Cited by Applicant in paper #7 - an IDS. (Henceforth referred to as "**Borden**").

5. **Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Borden.**

6. In regards to Claim 14, Borden teaches the following limitations:

14. A computer system comprising:
partition processing means for running multiple operating system images,
(Borden, especially: pp.104-106)

storage means for storing a program and data;
(Borden, especially: pp.104-106, Figures 2 and 7, and associated text.)

an input device for inputting data, and
(Borden, especially: pp.104-106, Figures 2 and 7, and associated text.)

display means for displaying graphical representations to a user;
wherein the program implements the graphical user interface for
configuring processors.
(Borden, especially: pp.104-106, pp.114-115, Figures 2 and 7, and associated
text.)

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The prior art used for these rejections is as follows:
9. Borden, T.L. et al. "Multiple Operating Systems on One Processor Complex." 8204 IBM Systems Journal. Vol.28, No.1. pp.104-122. 1989. Cited by Applicant in paper #7 - an IDS. (Henceforth referred to as "**Borden**").
10. IBM Corp., AS/400 Logical Partitions Hardware Planning Guide. © 1999. (Henceforth referred to as "**AS/400**").
11. Schimunek, G. et al. Slicing the AS/400 with Logical Partitioning : A How to Guide. August 1999.
12. The claim rejections are hereby summarized for Applicant's convenience. The detailed rejections follow.

13. Claims 1-2, 5-9, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borden in view of AS/400 and further in view of Official Notice.

14. In regards to Claim 1, Borden teaches the following limitations:

1. A method of configuring processors in a target system, comprising:
 - prompting a user to select workload units to use in the configuration of the processor in the target system;
(Borden, especially: pp.107-109. "Partition Definition")
 - prompting the user to input a quantity of processing power required in terms of partition workload capacity required; ...
(Borden, especially: pp.107-109. "Partition Definition")
 - ... and after validation, configuring the target system processors according to the settings determined by the routine.
(Borden, especially: pp.107-109. "Partition Definition")

Borden also expressly teaches on p.107 that "Partitions may be either dedicated or shared. Dedicated partitions have exclusive use of physical processors assigned to the partition; shared partitions share use of physical processors assigned to shared partitions under the control of the LPAR dispatcher ... It is a user's choice whether a partition is dedicated or shared. A partition that exhibits a steady demand for processing resources and that requires an integral number of processors can achieve the highest throughput when assigned dedicated physical processors. In most situations, however, the processing demands of a partition fluctuate from moment to moment, and greater system throughput can be achieved through the sharing of physical processors."

However, Borden does not expressly teach the following limitations:

... obtaining a system work capacity for the target system in the appropriate units from a look-up table;

calculating the number of partition processors;

wherein the number of partition processors equals the total number of system processors, times the partition workload capacity divided by the system work capacity;

testing the calculated number of partition processors to see if it is within a predetermined percentage of the next full processor increment;

if within the predetermined percentage, then recommending using dedicated processors, otherwise recommending using shared processors;

displaying the calculated number of partition processors and the recommended use of dedicated or shared processors to the user for validation or changing of the values; ...

AS/400 teaches the following limitations:

obtaining a system work capacity for the target system in the appropriate units from a look-up table;

calculating the number of partition processors;

wherein the number of partition processors equals the total number of system processors, times the partition workload capacity divided by the system work capacity;

More specifically, AS/400 (p.34) teaches a table with CPW statistics for several IBM computers, with several different configurations.

AS/400 (p.9) teaches the following equation:

"Relative logical partition performance = (CPW) (# processors in the logical partition / total # of processors)."

If the elements in this equation are solved for the "# processors in the logical partition" element, then the equation is rearranged as follows:

"(# processors in the logical partition) = (total # processors) (Relative logical partition performance) / (CPW)".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Borden with those of AS/400 because they both teach features of IBM's LPAR product.

In regards to the following limitations,

testing the calculated number of partition processors to see if it is within a predetermined percentage of the next full processor increment;

if within the predetermined percentage, then recommending using dedicated processors, otherwise recommending using shared processors;

displaying the calculated number of partition processors and the recommended use of dedicated or shared processors to the user for validation or changing of the values;

Even though Borden does not expressly teach “testing the calculated number of partition processors to see if it is within a predetermined percentage of the next full processor increment”, Official Notice is given that would have been obvious to one of ordinary skill in the art to do so because Borden (p.107) teaches that “A partition that exhibits a steady demand for processing resources and that requires an integral number of processors can achieve the highest throughput when assigned dedicated physical processors”, and therefore it would be desirable to test if it was possible to allocate dedicated processors, because these would be the most efficient in the described circumstances.

Moreover, Official Notice is given that it would have been obvious to one of ordinary skill in the art to include a margin of error in the calculation, (“... within a predetermined percentage ...”). It is old and well known in the art that estimations of capacity requirements are not 100% accurate or precise. It therefore would have been obvious to include a margin of error in order to offset this imprecision and inaccuracy.

In addition, Official Notice is given that it would have been obvious to one of ordinary skill in the art to display the calculation results for user validation or override. The feature of a user display of computation results is old and well

known in the art, and existed in other operating system installation packages at the time the invention was made. It would have been obvious to one of ordinary skill at the time the invention was made to include such a feature for user validation or override of the calculated results, because technically knowledgeable users would have wanted to have the opportunity to veto the default settings determined by the calculation.

15. In regards to Claim 2, Borden teaches the following limitations:

2. The method according to claim 1, wherein the workload units to use in the configuration of the processor in the target system are in commercial processing workload (CPW) units, transaction processing performance council (TPC-C) units, or any well-defined workload measurement units.
(Borden, especially: p.115)

16. In regards to Claim 5, Borden teaches the following limitations:

5. A processing system running multiple operating system images (same or different) having logical partitions and implementing the method according to claim 1.
(Borden, especially: pp.104-105)

17. In regards to Claim 6, Borden teaches the following limitations::

6. A computer program product, comprising:
a recording medium, and
instruction means, disposed on the recording medium, for causing
a computer to implement the method of configuring processors in a target
system according to claim 1.
(Borden, especially: p.106. See references to PR/SM and VM/XA SP control
program.)

18. In regards to Claim 7, Borden teaches the following limitations:

7. A computer system having processing means, storage means, input means, and display
means, and operating a graphical user interface utilizing the method according to claim 1.
(Borden, especially: Figures 2 and 7, and associated text.)

**19. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Borden in view of AS/400 and further in view of Official Notice and further
in view of LPAR.**

20. In regards to Claim 3, Borden does not expressly teach the following limitations:

3. The method according to claim 1, wherein the number of partition processors calculated has a resolution of at least two digits to the right of the decimal.

LPAR does teach this (see LPAR, pp.5-6).

It would have been obvious to one of ordinary skill in the art to modify the teachings of Borden with those of LPAR, because both expressly teach about the "LPAR" product.

21. In regards to Claim 4, Borden does not expressly teach the following limitations:

4. The method according to claim 1, wherein the predetermined percentage of the next full processor increment is twenty-five percent.

LPAR does teach this (see LPAR, pp.5-6).

It would have been obvious to one of ordinary skill in the art to modify the teachings of Borden with those of LPAR, because both expressly teach about the "LPAR" product.

22. Claims 8-13 are rejected based on the same reasoning as claims 1-6, immediately above. Claims 8-13 are product claims reciting the equivalent limitations as are recited in method claims 1-6 and taught throughout Borden, AS/400, Official Notice, and LPAR.

Response to Amendment

Re: Information Disclosure Statement

23. Examiner thanks the Applicants for providing a copy of Item BR in the IDS of paper #3, "IBM Corporation, S/390 Processor Resource/Systems management Guide (IBM Pub. No. GA22-7236-04, 5th Ed., March 1999" which was missing

from the case. An updated copy of the IDS, which includes a signature for this reference, is included with this Office Action.

Re: Claim Rejections - 35 USC § 112

24. Applicants have amended Claims 2 and 9 to delete the vague and indefinite phrase "... or any well-defined workload measurement units". Examiner has therefore withdrawn the relevant 35 U.S.C. 112, second paragraph rejections.

Re: Claim Rejections - 35 USC § 102

25. Applicants argue (paper #9, filed 4/2/04, p.10) that the rejection of claim 14 as being anticipated by Borden "includes similar elements" as Applicants' arguments regarding the 35 USC §103 rejections of claim 1, "... and is patentable over Borden for similar reasons." Examiner addresses those arguments immediately below.

Re: Claim Rejections - 35 USC § 103

26. In regards to the rejection of Claim 1, Applicants argue in paper #9, p.7, that Borden (pp.107-109) does not teach the claimed limitation:

... prompting the user to input a quantity of processing power required in terms of partition workload capacity required.

According to the Applicants,

... Borden merely recites: "A user must specify the following items: The names of the partitions to be used [,] The I/O configuration [,] The storage configuration [, and] The processor configuration." Thus Borden does not teach or suggest a "partition workload capacity required" as recited in claim 1 because "names", "storage configuration", and "processor

configuration" do not teach or suggest "partition workload capacity", so Borden does not teach or suggest "prompting the user to input a quantity of processing power required in terms of partition workload capacity required" as recited in claim 1.

However, the Borden teaches on pp.107-109 (emphasis added) that:

Creating and using a partition involves two steps:

1. Defining the resource requirements of the partition
2. Allocating and initializing the resources of the partition
(activating the partition)

In order to define the resources of a partition, a user must specify the following items:

- The names of the partitions to be used
- The I/O configuration
- The storage configuration
- The processor configuration

...The storage configuration consists of the amount of main storage and expanded storage in 1-megabyte increments that is required for the partition. The processor configuration for the partition consists of the number of logical processors required, the number of logical vector facilities required, and the mode of partition, and takes into account whether dedicated or shared use of these elements is required.

Shared partitions use one or more physical processors; therefore, each partition is given a weight (a relative priority) which is used by the LPAR dispatcher to allocate and control the access of the partition to the physical processors.

... After a partition is defined, no resources are allocated to it, except for the I/O configuration, until the partition is activated. **At activation the resource requirements of the partition are compared with the available physical resources to determine if the activation will be allowed.** Allocation of the storage configuration for the partition does not occur until activation of the partition; therefore, more storage can be defined than is installed, but the amount of storage in use (activated) is limited to the amount installed.

In particular, Examiner points out Borden's teaching that "... At activation the resource requirements of the partition are compared with the available physical

resources to determine if the activation will be allowed." It is therefore inherent that "the resource requirements of the partition" have been entered by the user, otherwise this teaching will not function.

Examiner therefore interprets that these teachings correspond to the claimed "... prompting the user to input a quantity of processing power required in terms of partition workload capacity required".

27. In regards to the rejection of Claim 1, Applicants argue in paper #9, p.8, that Borden in view of AS/400 do not teach the claimed limitation:

... calculating the number of partition processors; wherein the number of partition processors equals the total number of system processors, times the partition workload capacity divided by the system work capacity,"

The AS/400 reference teaches on p.9 that

You measure the total system performance in the *Commercial Processing Workload (CPW)* that is specified for each model. The relative performance of a partition equals the CPW for the entire system times the number of processors in a logical partition divided by the total number of processors on the system.

Relative logical partition performance = (CPW) (# processors in the logical partition / total # of processors

According to the Applicants, teaches away from the claimed limitation because "the AS/400 reference describes 'you' (the user) ... calculat[e] the performance", while in claim 1, "... the computerized method calculates [the number of partition processors]".

In addition, the Applicants argue that the AS/400 reference has no motivation to combine because "in the AS/400 reference, the number of available processors are predetermined by the user."

Examiner respectfully disagrees on both points. In regards to the first point, and as cited by the Examiner in the preceding paragraph, Borden teaches that "At activation the resource requirements of the partition are compared with the available physical resources to determine if the activation will be allowed." Therefore, it is inherent that the computerized method (and not the user) calculates the available physical resources in order to compare them to the desired allocation.

Moreover, given that Borden teaches the use of both a user entered value of available processors, and measurement of available processors, there exists a motivation to combine. Examiner asserts that AS/400 does not teach away from the claimed invention.

28. In regards to Claim 1, Applicants request (paper #9, p.9) that the Examiner provide a reference that describes "testing the calculated number of partition processors to determine if it is within a predetermined percentage of a next full processor increment".

Examiner noted in the original rejection that Borden expressly teaches on p.107 that:

"Partitions may be either dedicated or shared. Dedicated partitions have exclusive use of physical processors assigned to the partition; shared partitions share use of physical processors assigned to shared partitions under the control of the LPAR dispatcher ... It is a user's choice whether a partition is dedicated or shared. A partition that exhibits a steady demand for processing resources and that requires an integral number of processors can achieve the highest throughput when assigned dedicated physical processors. In most situations, however, the processing demands of a partition fluctuate from moment to moment, and

greater system throughput can be achieved through the sharing of physical processors."

Examiner refers the Applicants to Borden, p.115, (emphasis added) which teaches that:

The CPWs are used to calculate a target amount of processor utilization for each logical processor and for each partition. This calculation will represent the distribution of processor resources if each partition is actively competing for the resources; however, if any partition is not able to use its target share of the physical processor resources, its unused allotment will be divided among the remaining competing partitions.

... The other control over processor resource consumption is the number of logical processors in the partition. A logical processor cannot consume more resources than the worth of a single physical processor. By "varying" a logical processor "off line" or "on line" to the operating system running in the partition, the user can change the ability of a partition to compete for processor resources.

Implicit in this teaching is that if a logical processor approaches full consumption, another logical processor can be brought "on line". Examiner finds that this corresponds to the claimed limitation "... testing the calculated number of partition processors to determine if it is within a predetermined percentage of a next full processor increment"

29. Also in regards to Claim 1, Applicants argue (paper #9, p.9) that "Both Borden and AS/400 teach away from "configuring the processors according to the calculated number of partition processors and the recommended use, based on the quantity of processing power required in terms of partition workload capacity required" because both Borden and AS/400 teach that the user initially specifies the processor configuration.

Examiner respectfully disagrees. Examiner also refers the Applicants to Borden, p.115, (emphasis added) which teaches that:

The CPWs are used to calculate a target amount of processor utilization for each logical processor and for each partition. This calculation will represent the distribution of processor resources if each partition is actively competing for the resources; however, if any partition is not able to use its target share of the physical processor resources, its unused allotment will be divided among the remaining competing partitions.

30. Applicants argue (paper #9, p.9) that Claims 8 and 14 contain similar elements as previously argued above for claim 1. Claims 2-7 and 9-13 are dependent on claims 1-8, respectively. Since the Examiner is maintaining the rejection of Claim 1, the rejections of these claims are also being maintained.
31. In regards to the rejections of Claims 3 and 4, Applicants repeat the same argument presented above, regarding the user specifying the processing power, rather than it being calculated. Based on the rationale provided above, Examiner is maintaining these rejections.

Conclusion

32. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory

period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (703) 306-0297. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on (703) 305-9704. Any response to this office action should be mailed to:

Director of Patents and Trademarks
Washington, DC 20231

Hand-delivered responses should be brought to the following office:

4th floor receptionist's office
Crystal Park 2
2121 Crystal Drive
Arlington, VA

Art Unit: 2123

The fax phone numbers for the organization where this application or proceeding is assigned are:

All communications: (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is:
(703) 305-3900.

Ayal I. Sharon

Art Unit 2123

June 7, 2004



KEVIN J. TESTA
SUPERVISORY
PATENT EXAMINER